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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MARCELO, MELVIN C	

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
06/15/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/900,272	CHEN, TAO	
	Examiner	Art Unit	
	Melvin Marcelo	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10-9-2006 have been fully considered but they are not persuasive.

2. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

3. Applicant's argument regarding that Chen is directed to providing a transmission schedule based upon a present need which is in distinct contrast to applicant's schedule "based on a forthcoming event" is not persuasive since applicant's feature corresponds to pre-scheduled transmission (see original specification, paragraph 1046, "*In certain situations, the scheduler 218 has an advanced knowledge that a subscriber station 106 will have data to be transmitted on the reverse link at an ascertainable time in the future*") which is taught by the obvious combination of Chen et al. (US 5,923,650 A) and Criss et al. (US 2001/0029178 A1). With respect to reasons to combine Chen and Criss, the applicant's Chen '650 patent teaches to classify all remote user transmissions as either unscheduled or scheduled tasks (column 8, lines 51-59), wherein Criss teaches that it is known to provide pre-scheduled transmissions at the remote user (paragraph 0120). The base reference is applicant's earlier patent, wherein the teaching of classifying all remote user transmissions is a suggestion to a skilled artisan to classify all known remote user transmissions. Criss merely teaches that pre-scheduled remote user transmissions are known.

4. Upon review of the contents of the file, it is not clear to the examiner whether applicant has addressed Chen's teaching in column 8, lines 51-59, to classify all remote user

transmissions as either unscheduled or scheduled tasks. A skilled artisan would have classified a pre-scheduled transmission which is based on a forthcoming event as a scheduled tasks and thus, would have included the pre-scheduled transmission into the transmission schedule.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 5,923,650 A) in view of Criss et al. (US 2001/0029178 A1).

The claimed subject matter corresponds to applicant's earlier patent Chen '650, which is a statutory bar. Chen '650 does not teach determining a transmission schedule for at least one subscriber station due for a transmission of data based on a forthcoming event. From applicant's original disclosure (specification, paragraph 0046), this feature is interpreted as corresponding to a pre-scheduled transmission. Chen '650 teaches that reverse link transmissions from a remote user can be classified into two classes-unscheduled tasks and scheduled tasks (column 8, lines 51-59). The transmission schedule is based on the scheduled tasks (Reverse Link Rate Scheduling, beginning on column 9, line 42). A skilled artisan would have been motivated to classify all transmissions from a remote user into one of the two categories as explicitly taught by Chen.

Chen '650 does not teach a pre-scheduled transmission. Criss teaches that a remote user can have a pre-scheduled transmission (paragraph 0120). A pre-scheduled transmission

by definition is a scheduled task, rather than an unscheduled task. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Chen '650 invention to include the scheduling of pre-scheduled transmissions since all remote user transmissions must be classified as either unscheduled or scheduled task, wherein scheduled tasks are on the transmission schedule.

With respect to a "forthcoming event," a skilled artisan would have been motivated to use the approach of time to the pre-scheduled transmission to trigger the scheduling in Chen '650 since resources do not have to be reserved until the pre-scheduled time occurs (remote station does not need the resource before the pre-scheduled time).

With respect to the claims below, references to the prior art appear in parenthesis.

Claims

1. A method for scheduling transmission on a link in a communication system, comprising:

transmitting data on a first link in the communication system **(Chen'650, data and scheduling information can be transmitted together or separately (column 31, lines 8-20), wherein separate transmission includes periodic or staggered transmission along with data frames (column 13, lines 11-54))**;

determining a transmission schedule to transmit data based on a forthcoming event for at least one subscriber station due for a transmission of the data **(Obvious since the schedule in Chen '650 is based on scheduled tasks and Criss teaches that pre-scheduled transmissions are a known scheduled task, see reasoning above)**; *and*

transmitting scheduling information on the first link in the communication system **(Chen '650, column 31, lines 8-20)**.

2. The method as claimed in claim 1, wherein said transmitting scheduling information on the first link in the communication system comprises:

transmitting scheduling information together with said transmitted data on the first link in the communication system **(Chen '650, column 31, lines 8-20)**.

3. A method for scheduling transmission on a link in a communication system, comprising:

transmitting data on a first link in the communication system **(Chen'650, data and scheduling information can be transmitted together or separately (column 31, lines 8-20), wherein separate transmission includes periodic or staggered transmission along with data frames (column 13, lines 11-54))**;

determining a transmission schedule to transmit data based on a forthcoming event for at least one subscriber station due for a transmission of the data **(Obvious since the schedule in Chen '650 is based on scheduled tasks and Criss teaches that pre-scheduled transmissions are a known scheduled task, see reasoning above)**; *and*

scheduling transmission on the link in the communication system in accordance with a reception of said transmitted data on the first link **(Chen '650, column 31, lines 8-20)**.

4. The method as claimed in claim 3, wherein said scheduling transmission on the link in the communication system in accordance with a reception of said transmitted data on the first link comprises:

scheduling transmission on the link in the communication system at a first time instance delayed by a pre-determined amount from a time instance of the reception of said transmitted

data on the first link **(Figure 10, first time instance is K+7 delayed from the reception at K+6)**.

5. The method as claimed in claim 3 further comprising:

ascertaining the link capacity at a base station expecting said scheduled transmission on the link in the communication system in accordance with the reception of said transmitted data on the first link **(Transmission Rate Reassignment, beginning in column 15, line 13)**; *and*

transmitting, on the first link in the communication system, a change to at least one parameter of said scheduled transmission when said ascertained link capacity does not support said scheduled transmission **(Reassigned rates, column 15, lines 37-53)**.

6. The method as claimed in claim 5, wherein said transmitting, on the first link in the communication system, a change to at least one parameter of said scheduled transmission when said ascertained link capacity does not support said scheduled transmission comprises:

transmitting, on the first link in the communication system, a change to at least one parameter of said scheduled transmission together with said transmitted data **(Figure 10, box 316, the received data frame k+5 including the scheduling information is processed)**.

7. A method for scheduling transmission on a link in a communication system, comprising:

ascertaining the link capacity at a base station expecting a pre-scheduled transmission of data on the link wherein a transmission schedule to transmit the data is based on a forthcoming event of at least one subscriber station due for a transmission of the data **(Obvious since the schedule in Chen '650 is based on scheduled tasks and Criss teaches that pre-scheduled transmissions are a known scheduled task, see reasoning above. Chen'650**

teaches to ascertain link capacity based on all transmissions -- scheduled and unscheduled, column 15, lines 37-45); *and*

proceeding in accordance with said ascertained link capacity **(Transmission Rate Reassignment, beginning in column 15 line 13)**.

8. The method as claimed in claim 7, wherein said proceeding comprises:

abstaining form transmitting scheduling information on the first link when said ascertained link capacity supports the pre-scheduled transmission of data **(Obvious to not transmit scheduling information since a pre-scheduled transmission, by nature, does not require additional scheduling if there are no problems in the system)**.

9. The method as claimed in claim 8 further comprising:

transmitting re-scheduling information on the first link when said ascertained link capacity does not support the pre-scheduled transmission of data **(Obvious to transmit the transmission rate reassignment scheduling information when a pre-scheduled transmission cannot be accommodated)**.

10. The method as claimed in claim 7, wherein said proceeding comprises:

transmitting, on the first link, authorization for the pre-scheduled transmission of data when said ascertained link capacity supports the prescheduled transmission of data **(Obvious to provide authorization information since pre-scheduled transmission data such as software upgrades may be limited to authorized users)**.

11. The method as claimed in claim 10 further comprising:

transmitting re-scheduling information on the first link when said ascertained link capacity does not support the pre-scheduled transmission of data **(Obvious to transmit the transmission rate reassignment scheduling information when a pre-scheduled transmission cannot be accommodated)**.

12. *An apparatus for scheduling transmission on a link in a communication system* **(Chen'650, Figure 2)**, *comprising:*

a transmitter **(Box 4)**;

a processor **(Channel Scheduler 12 in Figure 3 includes a controller 92, column 9, lines 17-24)**; *and*

a storage medium coupled to the processor **(Channel Scheduler 12 includes memory devices, column 9, lines 25-41)***and containing a set of instructions executable by the processor to cause the transmitter to transmit data on a first link in the communication system, determine a transmission schedule to transmit data based on a forthcoming event for at least one subscriber station due for a transmission of the data,* **(Obvious since the schedule in Chen '650 is based on scheduled tasks and Criss teaches that pre-scheduled transmission is a known scheduled task, see reasoning above)** *and cause the transmitter to transmit scheduling information on the first link in the communication system* **(Chen '650, column 31, lines 8-20)**.

13. *The apparatus as claimed in claim 12, wherein the set of instructions executable by the processor to cause the transmitter to transmit data on a first link in the communication system comprises a set of instructions executable by the processor to cause the transmitter to*

transmit the scheduling information together with the transmitted data on the first link in the communication system **(Chen '650, column 31, lines 8-20)**.

14. An apparatus for scheduling transmission on a link in a communication system, comprising:

a transmitter configured to transmit data on a first link in the communication system **(Figure 2, Box 4)**;

a processor **(Channel Scheduler 12 in Figure 3 includes a controller 92, column 9, lines 17-24)**; *and*

a storage medium coupled to the processor **(Channel Scheduler 12 includes memory devices, column 9, lines 25-41)** *and containing a set of instructions executable by the processor to determine a transmission schedule to transmit data based on a forthcoming event for at least one subscriber station due for a transmission of the data,* **(Obvious since the schedule in Chen '650 is based on scheduled tasks and Criss teaches that pre-scheduled transmission is a known scheduled task, see reasoning above)** *and to schedule transmission on the link in the communication system in accordance with a reception of the transmitted data on a first link* **(Chen '650, column 31, lines 8-20)**.

15. The apparatus as claimed in claim 14, wherein the set of instructions executable by the processor to schedule transmission on the link in the communication system in accordance with a reception of the transmitted data on a first link comprises a set of instructions executable by the processor to schedule transmission on the link in the communication system at a time instance delayed by a pre-determined amount from a time instance of the reception of

the transmitted data on the first link **(Figure 10, first time instance is K+7 delayed from the reception at K+6)**.

16. The apparatus as claimed in claim 14 further comprising:

a second processor **(Controller 92, column 9, lines 20-24)**; *and*

a second storage medium coupled to the second processor **(Channel Scheduler 12 includes memory devices, column 9, lines 25-41)** *and containing a set of instructions executable by the second processor to ascertain the link capacity at a base station expecting the scheduled transmission on the link in the communication system in accordance with the reception of the transmitted data on the first link* **(Transmission Rate Reassignment, beginning in column 15, line 13)**; *and cause the transmitter to transmit, on the first link in the communication system, a change to at least one parameter of the scheduled transmission when the ascertained link capacity does not support the scheduled transmission* **(Reassigned rates, column 15, lines 37-53)**.

17. The apparatus as claimed in claim 16, wherein the set of instructions executable by the second processor to cause the transmitter to transmit, on the first link in the communication system, a change to at least one parameter of the scheduled transmission when the ascertained link capacity does not support the scheduled transmission comprises a set of instructions to cause the transmitter to transmit, on the first link in the communication system, a change to at least one parameter of the scheduled transmission together with the transmitted data **(Figure 10, box 316, the received data frame K+5 includes the scheduling information)**.

18. An apparatus for scheduling transmission on a link in a communication system, comprising:

a processor **(Chen'650, Figure 3, Scheduler 12 includes controller 92);**

a storage medium coupled to the processor **(Channel Scheduler 12 includes memory devices, column 9, lines 25-41)** *and containing a set of instructions executable by the processor to ascertain the link capacity at a base station expecting transmission of a pre-scheduled data on the link wherein a transmission schedule to transmit the data based on a forthcoming event of at least one subscriber station due for a transmission of the data, and proceed in accordance with the ascertained link capacity* **(Obvious since the schedule in Chen '650 is based on scheduled tasks and Criss teaches that pre-scheduled transmission is a known scheduled task, see reasoning above. Chen'650 teaches to ascertain link capacity based on all transmissions -- scheduled and unscheduled, column 15, lines 37-45).**

19. The apparatus as claimed in claim 18 further comprising a transmitter **(Chen'650, box 4 in Figure 2),** *wherein the set of instructions executable by the processor to proceed in accordance with the ascertained link capacity comprises a set of instructions executable by the processor to abstain from transmitting scheduling information on the first link when the ascertained link capacity supports the pre-scheduled transmission of data* **(Obvious to not transmit scheduling information since a pre-scheduled transmission, by nature, does not require additional scheduling if there are no problems in the system).**

20. The apparatus as claimed in claim 19, wherein the set of instructions further comprises a set of instructions executable by the processor to cause the transmitter to transmit re-scheduling information on the first link when the ascertained link capacity does not support

the pre-scheduled transmission of data **(Obvious to transmit the transmission rate reassignment scheduling information when a pre-scheduled transmission cannot be accommodated)**.

21. The apparatus as claimed in claim 18 further comprising a transmitter, wherein the set of instructions executable by the processor to proceed in accordance with the ascertained link capacity comprises a set of instructions executable by the processor to cause the transmitter to transmit authorization for the pre-scheduled transmission of data on the first link when the ascertained link capacity supports pre-scheduled transmission of data **(Obvious to provide authorization information since pre-scheduled transmission data such as software upgrades may be limited to authorized users)**.

22. The apparatus as claimed in claim 21, wherein the set of instructions further comprises a set of instructions executable by the processor to cause the transmitter to transmit re-scheduling information on the first link when the ascertained link capacity does not support the pre-scheduled transmission of data **(Obvious to transmit the transmission rate reassignment scheduling information when a pre-scheduled transmission cannot be accommodated)**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Marcelo whose telephone number is 571-272-3125. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Melvin Marcelo
Primary Examiner
Art Unit 2616

June 10, 2007